



ENHANCING LEARNING EFFECTIVENESS STRATEGY: SELF-DIRECTED LEARNING AND LEARNING FACILITIES AT SMK TEKNIK PAL SURABAYA

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Abstract - Learning effectiveness is the main key in achieving learning goals. With the aim of knowing the extent to which students can understand and apply the subject matter being taught. Therefore, this study aims to investigate how learning independence and learning facilities contribute to the effectiveness of student learning. The population of this study is aimed at students of the PAL Surabaya Engineering Vocational School. Quality education is the main key to forming educated and qualified human resources. Factors such as student learning independence and available learning facilities are considered to play an important role in increasing learning effectiveness. Learning methods are considered effective if they are able to achieve instructional goals optimally. This study uses a quantitative approach using survey methods and regression analysis. The study sample involved 75 students from class XII majoring in Computer Networks at PAL Engineering Vocational School, Surabaya. The study results show that learning independence and learning facilities significantly influence student learning effectiveness. The implications of these findings provide a basis for improving learning strategies and learning facilities to improve the quality of education at the PAL Technical Vocational School, Surabaya.

Keywords: Learning Independence; Learning Facilities; Learning Effectiveness.

INTRODUCTION

Education is a very important aspect in determining the progress of a country. According to Gunawan et al. (2016), good quality education is the main key to forming educated and qualified human resources in a country. The importance of education in a country's progress is related to increasing literacy levels and involves developing character, creativity and critical thinking skills. Quality education provides an understanding of academic concepts, and forms ethical, moral and leadership attitudes (Darmanto et al., 2014). To achieve optimal quality of education, a progressive education system is needed. Apart from that, the importance of a progressive education system is also related to empowering students to develop their potential to the maximum. An educational model that provides space for creativity, exploration and talent development will produce individuals who are academically smart and able to compete at the global level (Wahyudi et al., 2018).

The learning process involves interaction between educators and students in order to achieve predetermined educational goals. Where, educators play a role in delivering learning material by utilizing relevant approaches and effective strategies. In addition, students are expected to be actively involved in the learning process by exploring conceptual understanding, applying knowledge in practical contexts, and developing critical skills to achieve maximum learning outcomes (Yanti & Darmawan, 2016). This process can provide the development of critical skills, such as analysis, synthesis, and evaluation abilities, which are necessary for problem solving in learning. By integrating conceptual understanding, practical application, and critical skills development, students can achieve maximum learning outcomes, not only in terms of knowledge, but also in developing critical thinking abilities and practical skills that can be applied in everyday life.

A learning method is considered effective if it is able to produce maximum achievement of

specific instructional goals. Effectiveness is something that has a significant influence or effect, is effective, and is able to bring results or success from an effort or action (Sianturi et al., 2022). The effectiveness of learning can be assessed from the extent to which the specific instructional objectives that have been set have been successfully achieved. Assessment of learning effectiveness from the perspective of the extent to which specific instructional objectives are successfully achieved is a classic and fundamental approach to learning evaluation. Specific instructional objectives are concrete statements about the desired outcomes of a learning process (Joy & Garcia, 2000). Therefore, learning effectiveness is related to the application of appropriate learning methods, and achieving the desired results. For this reason, the effectiveness of learning can be seen from the impact of learning that is useful and has a purpose for students.

Learning independence is the main key to student success in the world of education. Students' ability to take initiative, identify learning goals, and develop steps to achieve them creates a strong foundation for achieving optimal learning outcomes. Apart from that, learning independence also involves students' ability to evaluate their progress independently (Saragih, 2014). Students who can measure the extent to which they have achieved their goals are able to overcome learning challenges. This ability comes into play during formal education at school or college, and becomes a skill that is highly valued in everyday life and future careers. According to Karina et al. (2018), students who are independent in learning tend to be more adaptive to change, better able to overcome obstacles, and more proactive in seeking new knowledge. This creates a solid foundation for academic success, and for facing the complexities of life and career in the future. Students' ability to take control of their own learning process creates an environment that supports the achievement of optimal learning outcomes, while also equipping them with valuable skills that will guide them through their life journey (Darmawan & Mardikanigsih, 2018). Thus, learning independence has a significant influence on learning effectiveness (Rofiin & Fauzan, 2022).

The influence of learning facilities on learning effectiveness cannot be ignored. Learning facilities are a vital component to support learning activities in schools and play an important role in determining the quality of performance of an educational institution. Complete and adequate learning facilities are not just physical facilities, but also determine the success of organizing teaching and learning activities. A school can be considered to have effective performance quality if the learning facilities provided meet required standards and make a positive contribution to student learning (Juliasari & Kusmanto, 2016). Adequate learning facilities include various elements, such as comfortable classrooms, complete libraries, laboratories and modern technological facilities. The existence of these facilities creates a conducive learning environment and provides concrete support for achieving educational goals. Easily accessible learning facilities will provide comfort for students to involve themselves in their learning activities (Lestari et al., 2023). These facilities should also be designed taking into account the diversity of student needs, ensuring that every student can access and use the facilities without obstacles. Learning facilities provide practical experience to students. Thus, learning facilities have an impact on the understanding of concepts, and on the development of practical skills required in the real world. The success of an educational institution in improving learning facilities can be an indicator of concern for the quality of education. Investing in optimal learning facilities can create an inspiring and motivating learning environment, producing students who are more active, creative and ready to face future challenges. Therefore, optimal learning facilities are an integral part of efforts to increase learning effectiveness (Azizah & Sri, 2021).

In this era of modern education, learning independence and learning facilities are key factors that influence the effectiveness of the learning process. The combination of learning independence and the availability of adequate learning facilities can have a sustainable positive impact on learning outcomes. For this reason, this study aims to determine the influence of learning independence and learning facilities on the learning effectiveness of PAL Engineering Vocational School students in Surabaya.

RESEARCH METHODS

This study is a quantitative study that uses survey methods. This study will focus on the student population of the PAL Engineering Vocational School in Surabaya, which overall consists of around 1100 students. This study will select the sample purposively, by taking students from class XII majoring

in Computer Networks as study subjects. The number of students in this sample is estimated at 75 students, who will be selected carefully to ensure the representativeness and relevance of the study results to the context of the department that is the focus of the study.

Purposive sample selection was carried out with special considerations, bearing in mind that class Thus, through selecting this sample, the study is expected to be able to explore contextual information about the dynamics of learning at the class XII level majoring in Computer Networks at the PAL Engineering Vocational School, Surabaya.

A sample of 75 students is expected to provide an adequate representation of the entire population, allowing the study to make more reliable generalizations regarding the influence of learning independence and learning facilities on learning effectiveness in this context. Thus, the selection of this sample was aimed at increasing the validity and applicability of the study findings to the student population of the PAL Engineering Vocational School in Surabaya as a whole.

The study instrument used was a questionnaire to collect data regarding students' perceptions of the influence of learning independence and learning facilities on learning effectiveness. The questionnaire will include structured questions related to the study variables.

Study variables consist of two types, namely independent variables, which consist of learning independence and learning facilities, and dependent variables, namely learning effectiveness. Therefore, the operational definitions and study indicators can be explained as follows:

1. Definition of learning independence by Ranti et al. (2017) views learning independence as the ability to take responsibility for one's own learning process which includes learning planning to achieve desired results. The constituent indicators described by Hutomo et al. (2012) helps detail the concrete aspects of learning independence, and includes personal planning, learning initiative, use of resources, self-awareness, responsibility for results (Hutomo et al., 2012).
2. The definition of learning facilities provided by Fazariyah & Dewi (2022) describes learning facilities as tools used by teachers in the teaching and learning process and also as tools used by students when they receive the material being taught. The indicators that make up learning facilities are described by Yugiswara et al. (2019) involves various aspects, namely space, information media, books, learning tools.
3. The definition of student learning effectiveness given by Lembong et al. (2015) describe learning effectiveness as the extent to which students achieve the expected learning outcomes according to their respective abilities. The indicators of student learning effectiveness described by Lembong et al. (2015) involves several aspects, namely achieving learning outcomes, active involvement in learning, understanding the material, and using effective learning strategies.

Data collection was carried out by distributing questionnaires to a selected sample of students. The data collected in this study will undergo analysis using statistical methods, especially regression analysis. The main aim of this analysis is to identify and understand the extent of the influence of learning independence and learning facilities on learning effectiveness. The use of regression analysis in this study will provide a more detailed and measurable picture of the relationship between the variables being studied and involves the use of other analytical tools.

RESULTS AND DISCUSSION

This study will focus on the population of PAL Engineering Vocational School students in Surabaya, taking samples from class XII majoring in Computer Networks as study subjects. The number of students in this sample was 75 students, but 69 students provided respondents. Choosing a study subject from the Computer Networks department can provide deeper insight into the factors that influence learning independence, learning facilities, and student learning effectiveness in the field of information technology. A large enough sample size can provide adequate accuracy in analyzing the relationship between observed variables. By focusing the study on a particular group, namely class.

The validity test was carried out to determine the influence of learning independence and learning facilities on learning effectiveness. The results of this validity test provide findings indicating that not a single statement item was eliminated during the validity test process. This is caused by the corrected item total correlation value which exceeds 0.3 for each statement item. A corrected item total correlation value that exceeds 0.3 indicates that each statement item correlates with the total score of

the instrument positively and significantly. Therefore, no statement items are considered irrelevant or incompatible with the concept being measured.

Reliability tests have been carried out to evaluate the reliability of the study instrument in measuring learning independence, learning facilities, and learning effectiveness. The results of this reliability test show a Cronbach's Alpha value that is higher than the minimum limit value of 0.6, indicating a good level of reliability. The learning independence variable reached a value of 0.976, learning facilities had a reliability of 0.943, and learning effectiveness had a value of 0.871.

Table 1
Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.966 ^a	.934	.932	.765

The results of the analysis using the coefficient of determination obtained an R value of 0.966, indicating a very high level of correlation between learning independence and learning facilities at the PAL Surabaya Technical Vocational School on student learning effectiveness. Furthermore, the R Square value of 0.934 indicates that around 93.4% of the variation in learning effectiveness can be explained by these variables. This means that most of the variation in learning effectiveness can be attributed to learning independence and learning facilities in the school environment. However, there are still around 6.6% other variations that cannot be explained by learning independence and learning facilities which may be influenced by other factors not examined in this study.

Table 2
t test

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.703	.525		3.244	.002
	X1	.803	.105	.296	7.653	.000
	X2	1.919	.097	.766	19.796	.000

In the regression equation $Y = 1.703 + 0.803X1 + 1.919X2$, the value 1.703 is the intercept or constant. The interpretation is that if the two independent variables, namely learning independence (X1) and learning facilities (X2), have a value of zero, then the predicted student learning effectiveness (Y) will be around 1.703. Furthermore, the coefficient of 0.803 related to the learning independence variable (X1) shows how big a change in learning effectiveness value is expected for every one unit change in learning independence. In this context, if learning independence (X1) increases by one unit, then student learning effectiveness (Y) is estimated to increase by 0.803. Likewise, the coefficient of 1.919 associated with the learning facilities variable (X2) shows how large a change in the learning effectiveness value is expected for every one unit change in learning facilities. In other words, if learning facilities (X2) increase by one unit, student learning effectiveness (Y) is estimated to increase by 1.919. It can be explained, the regression equation provides a detailed description of the contribution of each variable to predicting student learning effectiveness, as well as providing a baseline (intercept) value when all independent variables have a value of zero.

The significant results obtained from table 2, namely a value of 0.000 for learning independence and learning facilities at the PAL Engineering Vocational School in Surabaya, show that there is a very significant influence on learning effectiveness. A significance figure smaller than 0.05 indicates that the relationship between learning independence and learning facilities and learning effectiveness at the PAL Surabaya Technical Vocational School is partially significant.

Table 3
ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	543.241	2	271.620	463.559	.000 ^b
	Residual	38.672	66	.586		
	Total	581.913	68			

Based on the data contained in Table 3, the F test results show an F-calculated value of 463.559, with a significance level of 0.000. With a probability value smaller than 0.05, the conclusion is that the regression equation has a high level of significance. This can be indicated that the variables of learning independence and learning facilities together have a significant influence on learning effectiveness at the PAL Engineering Vocational School, Surabaya.

Based on the results of the study, it can be stated that learning independence has a significant positive influence on the learning effectiveness of PAL Engineering Vocational School students in Surabaya. This is in accordance with the study of Akhter et al. (2020); Chen (2022); Rofiin and Fauza (2022). The positive contribution of learning independence to student learning effectiveness reflects the success of students' internal factors involving motivation, self-responsibility, and the ability to manage time and resources independently. High motivation triggers students' drive to seek deeper understanding of the subject matter, making them more involved in the learning process. Self-responsibility refers to students' awareness of their role and responsibility for personal learning, so that they are more likely to be active in taking learning initiatives. Additionally, the ability to manage one's own time and resources creates a solid foundation for learning independence. Students who are able to manage their time well and manage resources, such as books, learning materials, and technology, tend to achieve higher learning effectiveness. The importance of these internal factors shows that developing learning independence is not only about understanding the material, but also about developing psychological aspects and life skills that support success in the learning process. This means that the higher the level of student learning independence, the better the effectiveness of their learning. Students who have a high level of learning independence tend to show higher learning intensity, which in turn increases the effectiveness of their learning (Sugianto et al., 2020). Learning independence creates students who are able to regulate their own learning, and influences the quality of interactions with teachers and the learning methods used. Therefore, to achieve optimal learning effectiveness, it is necessary to pay attention to both aspects of student autonomy and the interactions built into learning.

The results of the analysis which state that learning facilities have a significant effect on the learning effectiveness of PAL Engineering Vocational School students in Surabaya illustrate the close relationship between the condition of learning facilities and infrastructure and the results of student learning achievement. This finding is in line with research by Azizah and Sri (2021); Garad et al. (2021); Muali et al. (2022), which supports the idea that adequate learning facilities can create conditions that support effective learning. Attractive and innovative learning facilities can arouse students' interest in learning (Saraswati et al., 2014). With interesting and innovative learning facilities, students are not just passive observers, but actors who are actively involved in exploring new concepts, opening up opportunities for the growth of creativity and interest in learning. Learning facilities that include good classrooms, modern learning equipment and a conducive environment can have a positive impact on student learning. Classrooms that are equipped with adequate learning facilities not only create comfortable physical conditions, but also provide a variety of learning resources that support teaching and learning activities. In addition, modern and conducive facilities can stimulate students' interest, increase their involvement in the learning process, and ultimately, increase learning effectiveness. By paying attention to the results of this analysis, schools can prioritize the development and maintenance of quality learning facilities as part of a strategy to improve student learning achievement. This underlines the importance of a supportive learning environment as a contributing factor in achieving the desired learning effectiveness at PAL Engineering Vocational School Surabaya.

CONCLUSIONS

In conclusion, the influence of learning independence and learning facilities on learning effectiveness has a significant impact on improving the quality of education. Independent students tend to be more active, motivated, and able to overcome learning challenges, which in turn increases overall learning effectiveness. On the other hand, optimal learning facilities provide the physical and technological support needed to improve the quality of learning.

As a suggestion, efforts need to be increased to develop student learning independence through a learning approach that provides space for individual initiative and responsibility. In addition, improvements and development of learning facilities must continue to be improved to ensure the

sustainability of a conducive learning environment. Teachers and educational institutions need to continue to encourage innovation in teaching methods and the use of learning technology to optimize learning effectiveness. The next suggestion is for cooperation between related parties, including the government, educational institutions and the community, to create synergy to increase student learning independence and improve learning facilities. Encourage the use of innovative approaches to teaching, including the use of educational technology, project-based learning, and active learning to increase student interest and engagement. Continuous monitoring of the quality and availability of learning facilities as well as improving learning methods can be concrete steps towards increasing sustainable learning effectiveness. Thus, the combination of high learning independence and optimal learning facilities can create a learning environment that stimulates and supports student success in achieving educational goals.

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